

Remarks

Reconsideration is requested.

Claims 1 and 6 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite with respect to the phrase "increase the area of said surface by approximately one-half".

Claims 1 and 6 have been rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida (U.S. 4,846,953).

Claims 2, 3, 7 and 8 have been rejected under 35 U.S.C. 102(b) as being anticipated by Kaufman (U.S. 5,763,989).

Claims 1, 4, 5 and 9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman (U.S. Patent No. 5,763,989).

Submitted herewith is a Declaration of Harold R. Kaufman (one of the named inventors) who describes the essential differences between the present invention and the cited references. The Declaration also clearly explains that the phrase "increase the area of said surface by approximately one-half" is defined in the specification and it is not indefinite. Thus, the Declaration explains that the quoted phrase has reference to the "electron-collecting surface" which is the anode surface readily available and utilized for electron collection. The area of the prior-art electron-collecting surface is surface 28 of anode 18 for the end-Hall ion source in Fig. 1. The area of the prior-art electron-collection surface for the source in Fig. 2 is surface 60 of anode 50. The increased area of the electron-collection surface of Fig.

3 is shown as areas 73, 74 and 75. The increase in area is created by protrusions and/or recesses and is the sum of areas 73, 74 and 75. Similarly, the increased area of the electron-collection surface in the closed-drift source of Fig. 9 is created by protrusions and/or recesses and is shown as area 122 (which exceeds the prior-art area of surface 60 in Fig. 2).

The Declaration further explains that the Yoshida patent describes a duoplasmatron ion source which is an electrostatic ion source where the acceleration of ions is accomplished electrostatically. In the present invention, a Hall-current ion source is used wherein the acceleration of ions is accomplished electromagnetically. In electrostatic acceleration, an acceleration-deceleration approach is used that prevents electrons from flowing from the ion beam back to the anode in the discharge region. Also, the "contour" in the Yoshida anode is known as an expansion cup which is on the opposite side of the anode from the "electron-collection surface" as defined in the present invention.

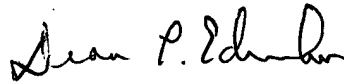
The Declaration also clearly explains that Fig. 11 of the cited Kaufman patent does not describe or suggest use of a contoured electron-collecting surface of increased area as required in the present invention. See para. 5 of the Declaration.

Claims 4, 5 and 9 have been canceled.

In view of the attached Declaration, and the foregoing remarks, applicants submit that all of the rejections have now

been overcome. Reconsideration and favorable action are
courteously solicited,

Respectfully submitted,

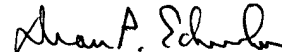


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